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DEVELOPING ARTIFICAL NEURAL NETWORK BASED BIKE RIDERS RECOGNIZING SYSTEM FOR DETECTING USE OF MOBILE PHONES WHILE DRIVING

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Abstract: An action that diverts the rider's attention from the road for a few seconds represents about half of all cases of traffic accidents using of mobile phones. Due to while driving or riding there using the mobile phones in road. Nowadays many youngsters using the mobile phone to take photos while driving. It is estimated that 80% of crashes and 65% of near collisions involved drivers inattentive to the traffic signals for few seconds before the signal indication. This project develops an algorithm for detecting the cell phones identification used while driving a vehicle. Support Vector Machine (SVM) with Polynomial kernel is the classification system to obtaining a success rate of 90.57% for the vision system. Test's done on the video show that it is possible to use the image data sets for training classifiers in real situations and every periods of three seconds were correctly classified at 87.43% of cases. Our system will detect the mobile users while driving and we will inform to the respective officer to take necessary action.

Keywords- Supports Vector Machine (SVM), Cell phones identifier, Mobile phone users Vision System, Image data.

I INTRODUCTION

According to The World Health Organization (WHO), road accident is one of the ten most frequent causes of death in the world. WHO published the report The Global Burden of Disease that shows that more than 1.2 million people died and 50 million were injured in traffic accidents worldwide? Traffic accidents cost US$ 518 billion every year. If nothing changes, in 2030, traffic accident will be the fifth cause of death in the world. In 2010, the United Nations (UN) created the program Global Plan for Decade of Action for Road Safety. The program main goal is to reduce the road traffic fatalities by 50% and save 5 million lives in ten years.

II RELATED WORK

This method is mainly used to detect the drivers whether they are using mobile phones at the time of driving this software may detect through the stored data base images. [1] The proposed a straightforward convolution neural network approach and a various combination of phone, hand and face detection and hand classification were compared. It must be noted that each study utilized different training and testing data, so comparison of this studies may be misleading.[2] They detect faces to check the presence of hands and cell phones. Challenging Strategic Highway Research Program (SHRP-2,) face view videos are utilized for a study of driving behavior. Their approach is to first detect the drivers' face using Supervised Descent Method and extract the left side and right side of the face region. Next, feature extraction techniques applied on these left/right side images, and these features are classified using Real Ad boost and SVM to detect cell phone usage. [3] In recent years, deep learning algorithms have shown to be the most effective method producing state-of-the-art results on many challenging application areas such as object detection, image recognition,

speech processing present a deep learning based Multiple Scale Faster R-CNN approach to solve the problems of driver distraction monitoring and highway safety, namely, the hand on the wheel detection and the cell-phone usage detection. They used Vision for Intelligent Vehicles and Applications (VIVA) Hand Database and SHRP-2 dataset.[4] The use of the three-axis accelerometer integrated on the phone is proposed in works such as and , where the first one has as main purpose of identifying sudden lane changes, or sudden change in the car's acceleration or irregularities on the road, but does not take into consideration if the driver is distracted or not by the phone.[5] To address the texting-while-driving issue, shows the autonomous detection of distracted driving by measuring the typing speed and accuracy on a phone with Symbian Operating System. Then, Shannon Entropy is used to measure the performance of texting while driving for both tasks competing for some of the same cognitive resources. This entropy is high when texting and driving, and low when texting or driving is the only action.

III EXISTING SYSTEM

The task of detect distracted drivers can be summarized as a binary classification problem. The driver is driving safely, or it's distracted. By contrast, if the goal is to identify the cause of the distraction, it's a multiclass classification problem. In this system, we address both tasks, we classify the type of distraction, associated with the use of the mobile phone and we also classify as a binary problem combining the types of distraction in one major class.

IV PROPOSED SYSTEM

In this project, we propose a machine learning solution that automatically processes images from internal video surveillance system, with the aim to detect bike riders associated with the use of mobile phone. More specifically the proposed approach is an artificial neural network (ANN) that detect if a rider is using or not a mobile phone, and the specific action, if the rider is talking on the phone, contour map will be detect the mobiles.

Block diagram

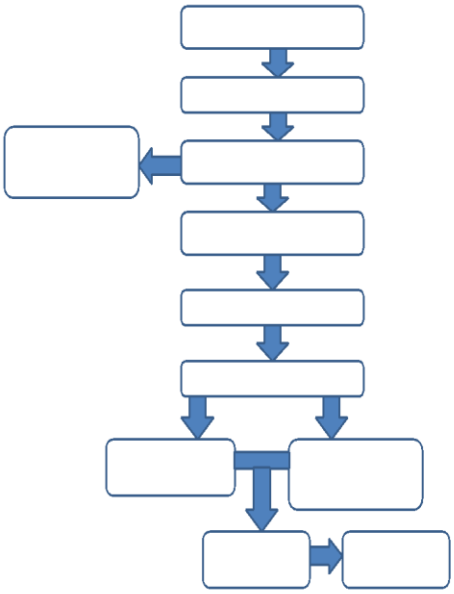

Fig :4.1 Block Diagram

V ALGORITHM

- Start the input web camera in a python software.
- In a python software select the desktop monitor then it will display the console window.
- Then select the python ide run application in desktop monitor to run the application.
- Click the camera to start the visual analyzing process of the running application.
- After the visual analyzing of the camera, it will detect identity and send to the data base phone image and buffer algorithm matcher to verify.
- Check the condition and verify then it will send to the contour mapping for detecting the mobile phone user.
- Finally end the given program.

VI EXPERIMENTAL RESULTS

The given experimental setup is to detect the mobile users while driving the vehicles/bikes it will capture the images and stored in the database of the mobile phones. It will help to reduce the road accidents while driving. If they are using mobile means the system that enable the input camera and then software will be processing in the monitor camera

started to Recording Infront of the driver and then it may have visual analysing to analyse the driver's pictures which are already stored in the database that can be trained by the Artificial neural networks/BURF algorithm matcher the mobile that can be easily matches the images. And finally, the mobile will be detected.

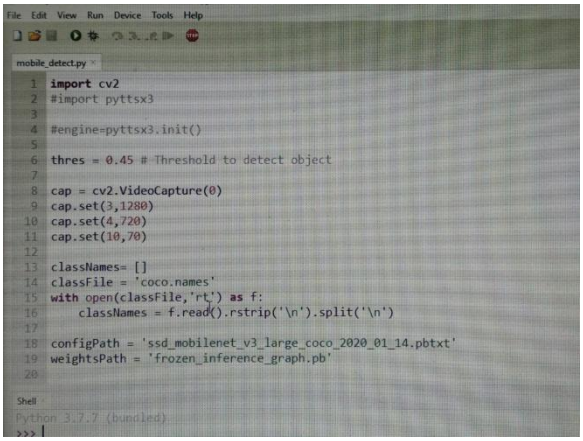

Fig: 5.1 Python program

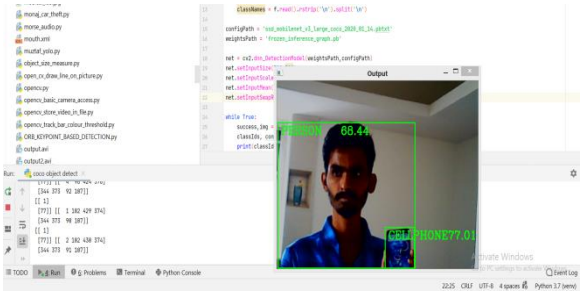

Fig: 5.2 output of thorny software

VI CONCLUSION

In this project the expressivity of ANNs for mobile phone detector. We show that the simple formulation of detection as ANN-base object can yield strong results when applied using a multi-scale course-to-fine procedure. These results come at some computational cost at training time – one needs to train a network per object type. As a future work we aim at reducing the cost by using a single network to detect objects of different classes and thus expand to

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